

The logo for the Energy Center of Wisconsin is centered in the upper half of the slide. It features a solid red circle with several concentric, thin yellow circles around it. From the top of the red circle, five yellow lines with arrowheads radiate upwards and outwards. From the bottom of the red circle, five yellow lines with arrowheads radiate downwards and outwards. The text "ENERGY CENTER OF WISCONSIN" is written in a white, sans-serif, all-caps font across the middle of the red circle.

ENERGY CENTER OF WISCONSIN

# **Biobased Industry Opportunity Scan: Phase 1 Results**

**Governor's Consortium on Biobased Industry  
August 29, 2005**

**YOUR PARTNERS IN ENERGY RESEARCH, EDUCATION & CONSULTING**

# **“Develop a leading-edge Wisconsin biorefining industry over the next 10 years”**

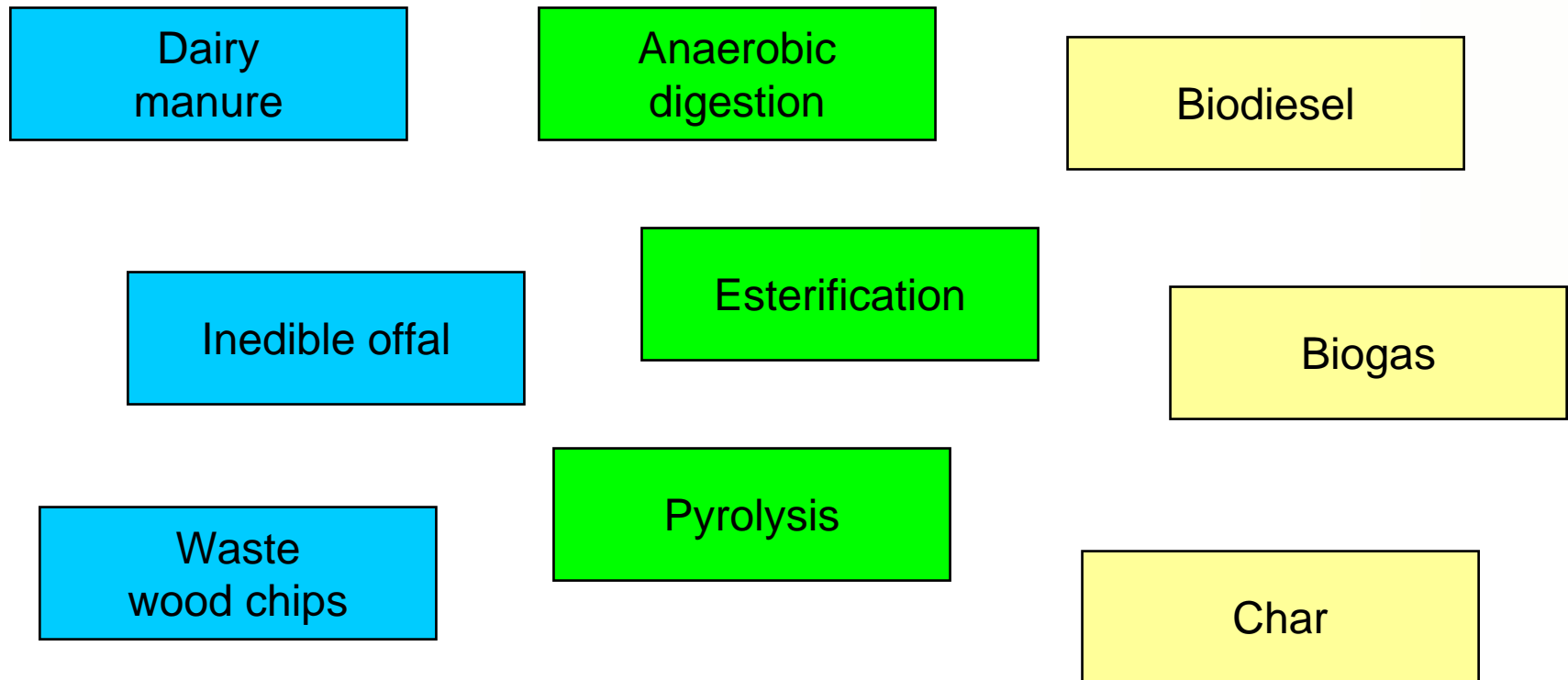
## **■ Project team**

- Energy Center of Wisconsin**
- Center for Technology Transfer**
- Center on Wisconsin Strategy**
- GDS Associates**
- Resource Strategies, Inc.**

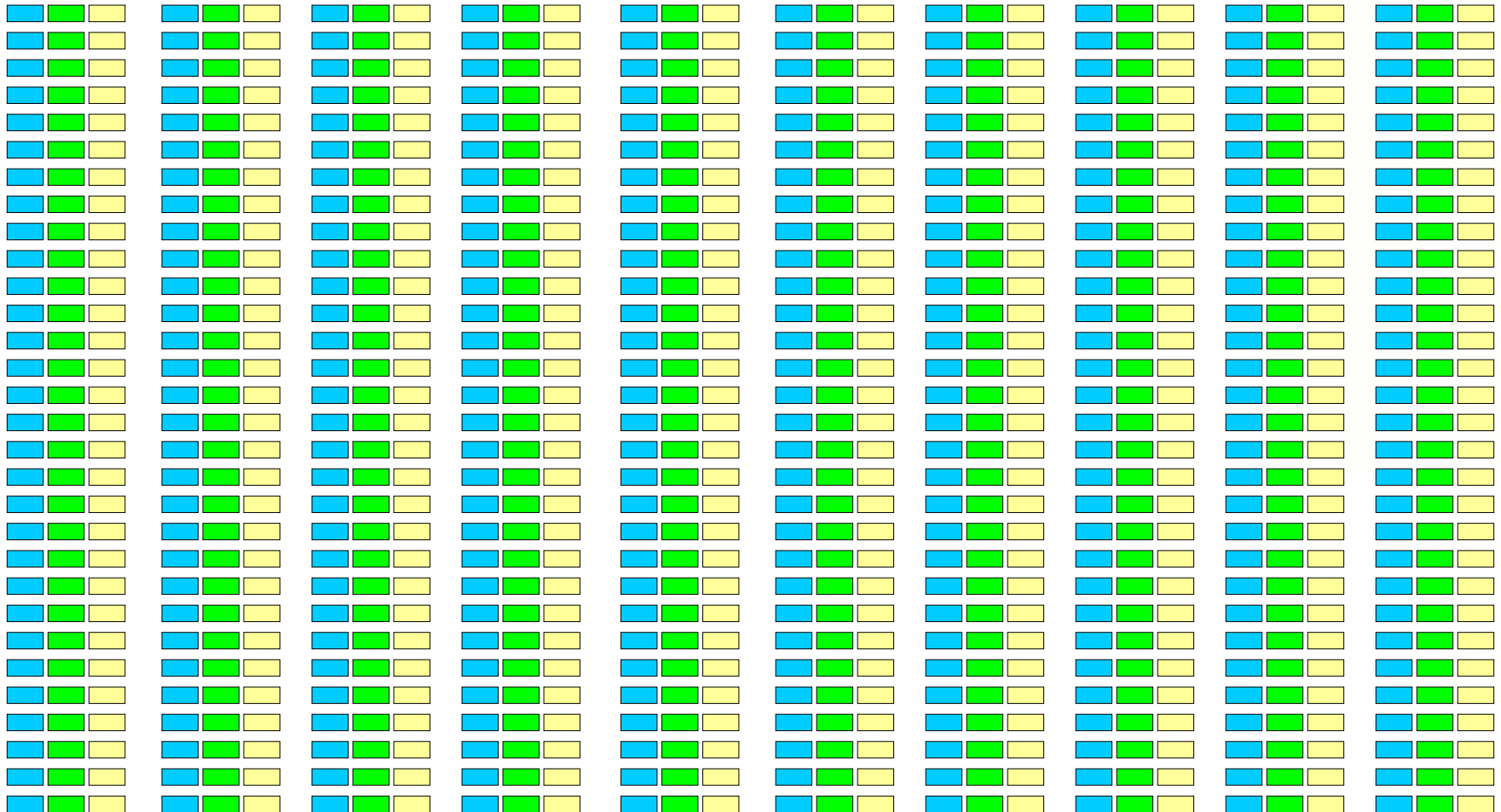


**ENERGY CENTER**  
OF WISCONSIN

# RPC: Resource-product chains



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# RPC Scoring

Dairy manure	Anaerobic digestion	Biogas
Forest residues	Fermentation of lignocellulose	Ethanol
Paper mill residue	Biomass gasification	Biobased syngas

# Cost per ton?

1: Essentially free  
0: Low  
-1: High

Dairy manure	Anaerobic digestion	Biogas	1
Forest residues	Fermentation of lignocellulose	Ethanol	0
Paper mill residue	Biomass gasification	Biobased syngas	1

# Commercial scale example?

- 1: Yes
- 0: Yes, but not with this feedstock
- 1: None whatsoever

Dairy manure	Anaerobic digestion	Biogas	1
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Forest residues	Fermentation of lignocellulose	Ethanol	0
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Paper mill residue	Biomass gasification	Biobased syngas	0
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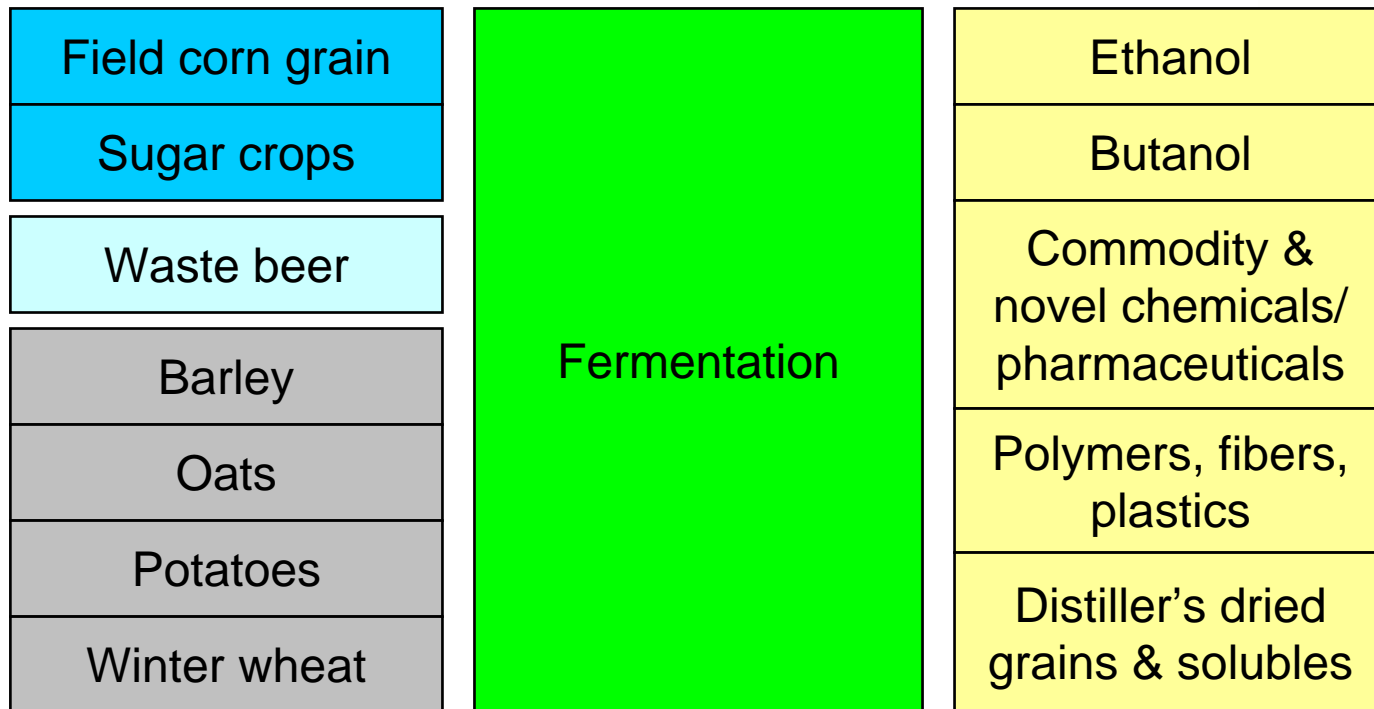


# Sufficient quantities?

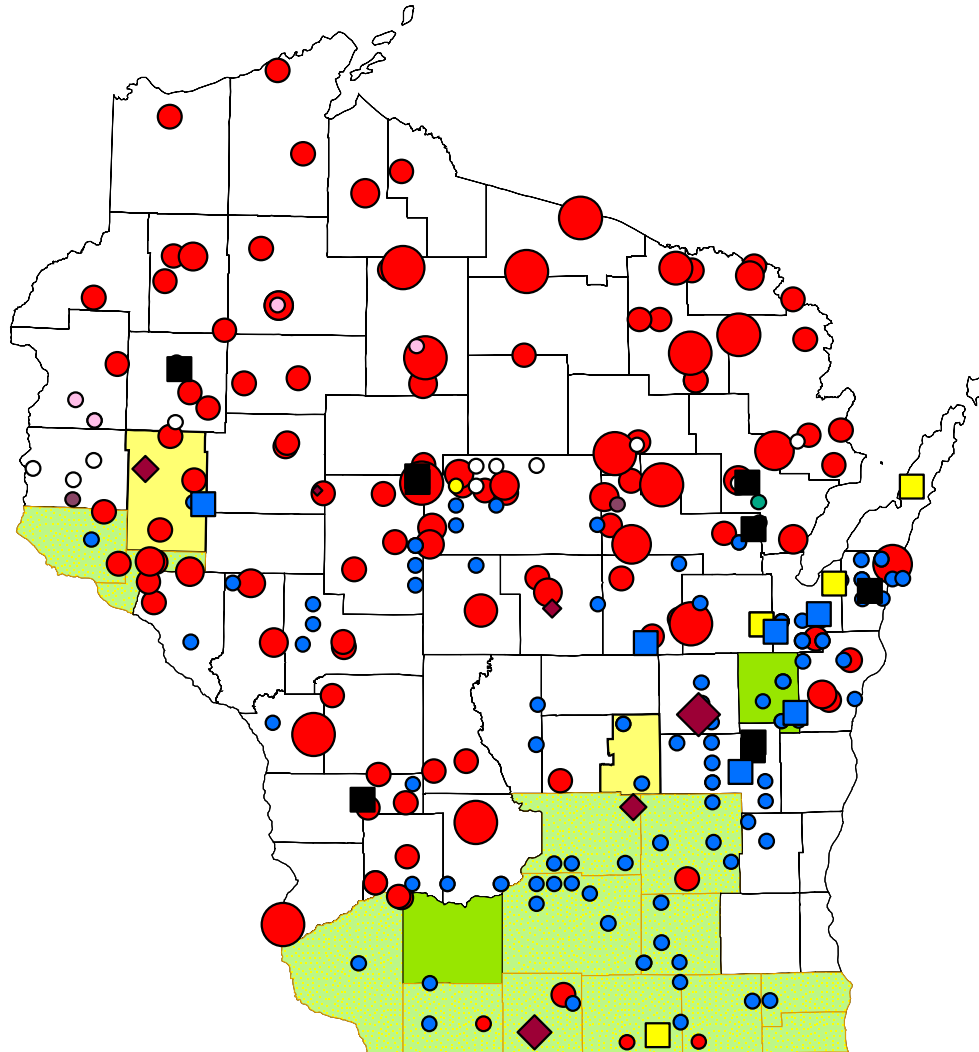
1: Yes  
0: Unknown  
-1: No

Dairy manure	Anaerobic digestion	Biogas	1
Forest residues	Fermentation of lignocellulose	Ethanol	0
Paper mill residue	Biomass gasification	Biobased syngas	X

# Process Suite: Fermentation of 6-carbon sugars and starches



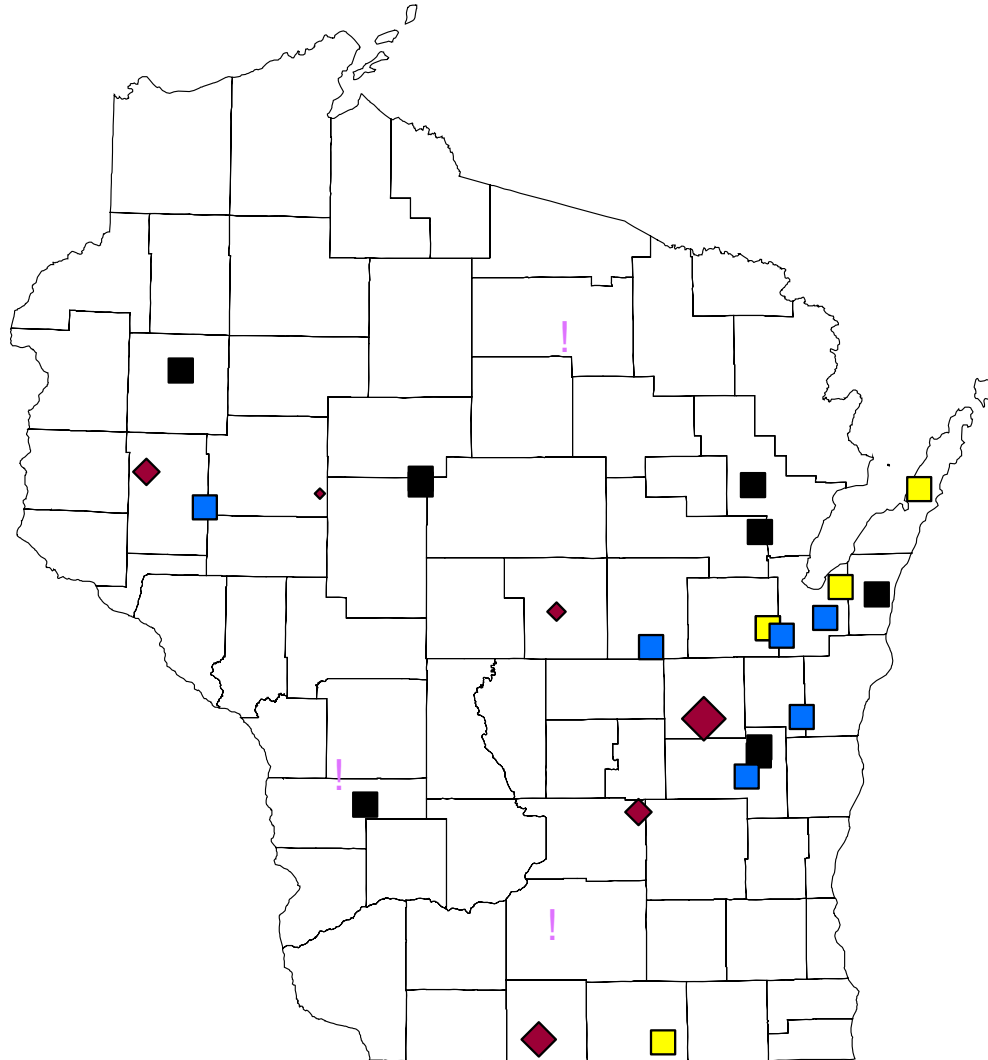
# Phase Two Mapping



**Dairy and Beef Production**  
(millions of gallons)

- Dairy Production
- Beef Production
- Dairy Production
- Dairy Production
- Dairy Production
- Dairy Production
- Dairy Production
- Dairy Production
- Poultry
- Swine

# Phase Two Mapping



## Biorefineries

! Biorefining hotspots

## Digesters

■ Operational

■ Not operational

■ Unknown status

## Ethanol Producers Production capacity (millions of gallons)

◆ 0

◆ 1-4

◆ 5-40

◆ 41-48

◆ 49-52

# Phase Two Interviews

- **Some questions are only answerable by those who have done it**
- **Wisconsin's intellectual resource**
  - **Who should we talk to?**
  - **What should we ask?**
  - **What insights does the Consortium have to share?**

# Contact information

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**Wisconsin Biorefining Development Initiative:**  
**[www.wisbiorefine.org](http://www.wisbiorefine.org)**